Promoting Oral Health

Oral diseases are among the most prevalent health problems in the United States. The 1980 Surgeon General's Report to the Nation listed dental disease as a critical health problem in the United States, and it remains today. Although oral health status has been improving, especially in children, the last recorded expenditures for dental care totaled more than $46 billion in 1996. According to national data, the prevalence of dental caries among children has declined steadily since the 1940s, and less than half of school-age children currently have any decay in their permanent teeth. However, among people between the ages of 18 and 19, an average of 12 tooth surfaces have decayed. Among adults in the United States, 94% show evidence of past or current tooth decay, and only one third of adults aged 35 - 44 years have all of their teeth. An average of 21.5 tooth surfaces have been affected by decay among all dentate adults. Periodontal diseases are also a chronic problem. Over 90% of people 13 years and over show some evidence of periodontal problems (loss of attachment), while moderate periodontal disease is evident in approximately 25% of people, nationally.

Several factors enhance oral health: improving self-care, such as brushing, flossing, and appropriate use of fluoride; receiving regular oral health services; practicing good eating habits, such as limiting the consumption of caries-promoting foods like candy and soft drinks; stopping use of tobacco products; and reducing alcohol use.

Fluoride has long been recognized as the most reliable preventive measure for caries control. Over 100 million people in the United States are not served by fluoridated water supplies adjusted to optimal levels; antifluoridation activities and insufficient resources inhibit the extension of optimal fluoridation into many communities. For people in these communities, supplemental fluorides, both systemic and topical, should be used. Adhesive dental sealants hold great potential for further significant reductions in dental decay.

A 1995 survey of dental service use and dental insurance coverage in the United States by state showed that the use of oral health services has increased only modestly in recent years, with approximately 70% of people in the United States reporting a dental visit during a 12-month period (one of the national Year 2000 Objectives for oral health) and approximately 45% of persons in the United States reporting having no dental insurance. Results from the same survey showed that approximately 73% of persons in Virginia reported a dental visit during the previous 12 months, and approximately 41% of persons in Virginia reported having no dental insurance. Among people who have lost most or all of their teeth and people with low incomes, dental care is obtained even less frequently. Dental visits provide not only access to routine diagnosis and treatment, but also exposure to education and prevention measures. For people who continue to encounter barriers to care, targeted community-based programs could improve access and, ultimately, reduce disease and tooth loss. In particular, many institutionalized people fail to receive periodic routine care.

In developing the targets for national oral health in the year 2000, a number of assumptions were made. Oral disease prevention technologies are not expected to undergo major changes in the next decade. There are new products such as fluoride releasing sealants, antibacterial rinses, plaque and tartar control dentifrices, slow release intraoral drug delivery techniques, and advanced microbiologic diagnostic tests. One principal strategy that should be considered is to expand the use of the most effective and efficient preventive methods. This implies and suggests that community water fluoridation be given the highest consideration in communities concerned with reducing oral diseases among their residents. Much of what can be accomplished will still depend on conscientious personal oral health care supplemented with regular professional care.

Since the New River Health District's public health dental program primarily serves the preventive, diagnostic, and restorative dental needs of indigent school-age children, Year 2000 Objectives focusing on the dental health of children in the categories of dental caries and oral health screening have been selected for this report. A section outlining community water fluoridation is also included since this the single most effective and efficient means of preventing dental caries in children and adults.

Dental Caries

Objective: Reduce dental caries (cavities) so that the proportion of children with one or more caries (in permanent or primary teeth) is no more than 35% among children ages 6 through 8 and no more than 60% among adolescents age 15.

Although technological advancements have produced new methods for preventing, diagnosing, and treating conditions that affect oral health, the backlog of unmet dental needs continues to be a threat to the overall health status of Americans. Improvements in oral health in the general population stem from a variety of factors including exposure to fluoride through community water supplies, fluoride supplements, and school fluoride mouth rinse programs. Dental sealants have become an important preventive measure for children in the last ten years. When applied to the chewing surface of the permanent molars, sealants prevent decay. Despite these advancements, epidemiologic evidence indicates decay is still prevalent and certain population groups--particularly low income adults and children, the elderly, and the disabled--are at substantial risk for significantly higher levels of dental disease.

Surveys in Virginia show that an average of 45% of children and adolescents have dental decay. A recent review of studies of the relationship of socioeconomic status (SES) and dental decay has shown low SES groups to be a significant risk for dental disease. These studies measure SES through income, education level, parental occupation, and maternal age at marriage. As SES improved, individuals with decayed, missing, and filled teeth counts decreased while the proportion of decay free children increased. Respectively, low income, Black, and Native American children have 91%, 65%, and 265% more untreated tooth decay than their peers. Estimates are that 97% of homeless persons need dental care. Surveys in Virginia show that children in the free lunch program consistently have higher decay rates than those who do not participate in the free lunch program.

Dental caries is perhaps the most prevalent disease known. Except in its early stages, it is irreversible and cumulative. Children ages six through eight have a complement of primary teeth, as well as their permanent first molars and incisors; and, therefore, they are at an important stage of dental development. The importance of optimal oral health for these children cannot be overemphasized; it is critical not only to their current oral functioning, but also for long-term health. Separate targets are set for adolescents because the prevalence of dental caries is so much higher among adolescents than young children. Moreover, an objective targeted at teenagers better reflects the cumulative caries experience of children during the 1990s.

The most recent available data from 1992 revealed that the percent of children ages six through eight with one or more dental caries in Virginia is 34%, as compared to the national percent of 54%. According to a local Decayed, Missing, and Filled Surfaces (DMFS) Survey conducted in the Montgomery County Public Schools by the public health dentist and his staff in 1992, 46% of children ages six through eight displayed one or more dental caries in permanent or primary teeth. This data is not available for the New River Health District and its other localities. It should be noted that there is no State or local data that address the percent of adolescents age 15 with one or more caries.

Community water fluoridation and use of preventive services, such as sealants and topical fluoride treatments, along with appropriate oral health behaviors, decrease the chances that children and adolescents will develop caries. Many young children, particularly those in high-risk groups, do not receive adequate fluoride exposure or adhesive sealants, regular professional care, or oral hygiene instruction. Unfortunately, many physicians do not conduct even a rudimentary examination of young patients' mouths or provide children or their parents with oral health counseling or referral for care. For children from low-income families, a significant hurdle is paying for services.

Objective: Reduce untreated dental caries so that the proportion of children with untreated caries (in permanent or primary teeth) is no more than 20% among children ages 6 through 8.

Early diagnosis and timely treatment of caries can halt tooth destruction and prevent tooth loss. The most recent available data from 1991 show that the national percent of children ages six to eight with untreated decay in primary and permanent teeth is 31%, as compared to Virginia's 45%. Among school-age children nationally in 1996, 45% had caries in their permanent teeth. Oral health surveys of children in Virginia have consistently reported regional, urban, and rural differences in dental decay rates. A 1994 survey found 28% of school children in Lynchburg had dental decay in their permanent teeth. This compares to a 1995 survey of Halifax County school children in which 41% had dental decay, with a decay rate of 57% at one school. Also, a 1987 survey of Charlotte County school children showed that 60% had dental decay.

According to a DMFS Survey conducted in the Montgomery County Public Schools by the New River Health District's public health dentist and his staff, 44% of the children ages six through eight had untreated dental caries in permanent or primary teeth. Surveys have shown that, because of inadequate receipt of routine dental care, certain populations experience higher rates of untreated caries. For example, the prevalence of untreated decay may be higher among the children of migrant workers than the total population; migrant workers' use of dental services is well below the national average.

Dental caries is a unique microbial infection. Once established, it is progressive, does not heal without treatment, and leaves visible evidence of past infection. Because early diagnosis and prompt treatment of caries can halt tooth destruction and prevent tooth loss, low prevalence of untreated caries should be attainable. A combination of financial, cultural, psychological, social, and geographic barriers are responsible for the lack of access to preventive and primary dental services and contribute to lack of treatment.

Access to dental care is an issue, and the dentist to population ratio is one measure of access. The dentist to population ratio reflects the number of dentists as compared to the total population for a geographic area. Problems in access to dental care for the general population exist in those areas of the State with high dentist to population ratios. These problems are compounded for special populations at higher risk for dental disease including low income adults and children, the disabled, and the elderly. The dentist to population ratio in Virginia approximates the national average of one dentist to 2,100 population. The average dentist to population ratio including all dentists is currently one dentist for every 2,002 people in Virginia. The ratio rises to one dentist for 2,536 people when only private general dentists are considered. The disparity in the number of dentists within specific areas of the State and access to dental services are not reflected in these figures.

The number of general dentists, specialists, public health dentists, and population to total dentist ratios for the New River Health District and its localities, as well as neighboring health districts, can be seen on the following table. When comparing each jurisdiction in the New River Health District, Floyd County has the highest total dentist to population ratio (1:6,109); and Radford City has the lowest (1:1,843). The overall total dentist to population ratio for the New River Health District is 1:2,893 compared to 1:2,002 for the State. It should be noted that Floyd County is one of 43 cities and counties in Virginia that has a dentist to population ratio greater than one dentist to 5,000 population, the current measure for a Federally Designated Health Professional Shortage Areas (HPSA). Floyd County is also one of 15 localities identified as most underserved based on high dentist to populations ratios, limited public health dentists, and few Medicaid providers with greater than $5,000 in compensation for dental services in 1995. It should be noted that five of the 15 underserved communities are in southwestern Virginia and included Buchanan, Dickenson, Floyd, Patrick, and Scott counties.

Availability of Dental Services
Selected Health Districts, New River Health District and Localities
1995

Health District	*1995 Population*	*General Dentists*	*Specialists*	*Public Health Dentists*	*Total Dentist to Population Ratio*	*General Dentist to Population Ratio*
Alleghany	159,354	35	10	1	1:3,464	1:4,553
Mt. Rogers	178,035	58	4	5	1:2,657	1:3,070
Roanoke	94,877	67	24	1	1:1,031	1:1,416
New River	**156,223**	**42**	**11**	**1**	**1:2,893**	**1:3,719**
Floyd	12,219	2	0	0	1:6,109	1:6,109
Giles	16,240	7	0	0	1:2,320	1:2,320
Montgomery	76,831	17	9	1	1:2,846	1:4,519
Pulaski	34,345	9	0	0	1:3,816	1:3,816
Radford	16,588	7	2	0	1:1,843	1:2,370

Source: *Virginia Health Statistics 1995*, Center for Health Statistics, Virginia Department of Health, January 1997.
Availability of Dental Health Services, Division of Dental Services, Virginia Department of Health, May 1997.

Poverty is also an indicator of unmet dental need in the community. Access and availability of primary dental care services for low income populations in Virginia is available to some individuals on a limited basis. Funding of dental services for individuals to age 20 is provided by the Department of Medical Assistance Services' (Medicaid's) Early and Periodic Screening, Diagnostic and Treatment (EPSDT) Program. These services are available through Medicaid providers and public health dental clinics. The number of individuals eligible for these services and the number of individuals accessing this service are provided by locality for the New River Health District in the following table.

EPSDT provides initial and periodic examinations and medically necessary follow-up care, including dental care. Federal law requires that states provide EPSDT services to eligible children from birth through age 20. States are required to inform all Medicaid eligible persons about EPSDT services, provide or arrange for the provision of screening services, and arrange for all corrective treatment needed as a result of the screening. Studies, both nationally and in Virginia, indicate that few eligible children receive preventive dental services (including instruction in self-care oral hygiene procedures, cleaning, and application of dental sealants to prevent decay) through the EPSDT program. For example, in 1993, there were 328,090 EPSDT eligible children in Virginia; however, only 64,718 or 19.7% of the eligible children received preventive dental services.

A significant proportion of the population at poverty in Virginia is not receiving dental services through the Medicaid system. The following table also reflects, by locality, the 1990 population at 100% and 200% poverty in the New River Health District. There is a service gap which relates to age as Medicaid dental services are only provided until age 20. An income gap also exists as some families may be at an income level that does not qualify for Medicaid but still are unable to provide dental services for themselves or their children. A number of these individuals are provided services by public health dentists at local health departments and in mobile dental trailers, in federally funded community health centers, in voluntary and free clinics, and in institutional dental programs.

Although there are a number of dental Medicaid providers in Virginia, the number of dental practitioners actually participating in the program and the level of service provided by the average practitioner are low. More than half of the participating dentists in Virginia provided less than $5,000 in dental services in 1995. Inadequate reimbursement is the most significant reason why dentists in Virginia do not accept Medicaid patients. Recently, many dentists in the New River Health District have removed themselves from the Medicaid provider list; as can be seen on the following table, in 1995, there were 15 dentists in the District who provided over $5,000 in Medicaid dental services per year.

Access to Dental Services for Special Populations
New River Health District and Localities
1995

Locality	*1995 Population*	*Number (and Percent) of Population at 100% Poverty*	*Number (and Percent) of Population at 200% Poverty*	*Dental Medicaid Eligible To Age 20*	*Total Medicaid Patients Treated*	*Medicaid Patients Treated in Public Health Clinics*	*Non Medicaid Patients Treated in Public Health Clinics*	*Number of Providers with Medicaid Compensation >$5,000*
Floyd	**12,219**	**1,833 (15%)**	**4,301 (35.2%)**	**512**	**239**	**0**	**0**	**2**
Giles	**16,240**	**2,111 (13%)**	**5,278 (32.5%)**	**595**	**311**	**0**	**0**	**2**
Montgomery	**76,831**	**18,439 (24%)**	**27,505 (35.8%)**	**2,598**	**1,512**	**331**	**601**	**8**
Pulaski	**34,345**	**4,808 (14%)**	**11,883 (34.6%)**	**1,645**	**940**	**0**	**0**	**3**
Radford	**16,588**	**5,640 (34%)**	**6,834 (41.2%)**	**426**	**227**	**0**	**0**	**0**
New River Health District	**156,223**	**15,935 (10.2%)**	**40,930 (26.2%)**	**5,776**	**3,229**	**331**	**601**	**15**

Sources: *Availability of Dental Health Services*, Division of Dental Health, Virginia Department of Health, May 1997.
Virginia Health Statistics 1995, Center for Health Statistics, Virginia Department of Health, January 1997.
Virginia Primary Care Data Profile, Virginia Primary Care Association, Inc., January 1998.

In Virginia, in 1995, more than 80% of visits to public health dental clinics were for persons less than 18 years of age; and 70% of the visits were for diagnostic and preventive services including dental sealants. The dental program of the New River Health District exists primarily to meet the preventive, diagnostic, and restorative dental needs of indigent school-age children. Children who receive free school lunch are eligible for free dental care at the New River Health District dental clinic. The free school lunch program eligibility standards are slightly above the 100% poverty level. Free school lunch is one of the best indicators for linking children with poverty and poor nutrition. In the New River Health District, Pulaski County had the largest percent of children (27%) approved for free school lunch in 1996, followed by Montgomery County (24%), Floyd County (24%), Giles County (23%), and Radford City (15%), respectively. The number and percent of children receiving free school lunch, as well as the school population, and the number of children ages 5 - 17 below 100% poverty, for Virginia and the New River Health District and its localities can be noted on the following table.

School Population, 100% Poverty, and Free Lunch
New River Health District and Localities
1995

Indicators	*Virginia*	*New River Health District*	*Floyd*	*Giles*	*Montgomery*	*Pulaski*	*Radford*
School population	**1,026,568**	**20,144**	**1,913**	**2,553**	**9,121**	**5,130**	**1,427**
Number children ages 5-17 below 100% poverty	**125,444**	**3,203**	**259**	**425**	**1,373**	**987**	**159**
Number and percent of children receiving free lunch	**265,215 26%**	**4,866 24%**	**457 24%**	**592 23%**	**2,214 24%**	**1,385 27%**	**218 15%**

Source: *Census/Free Lunch Information Data*, Virginia Department of Health, Division of Dental Health, December 1997.

Community Water Fluoridation

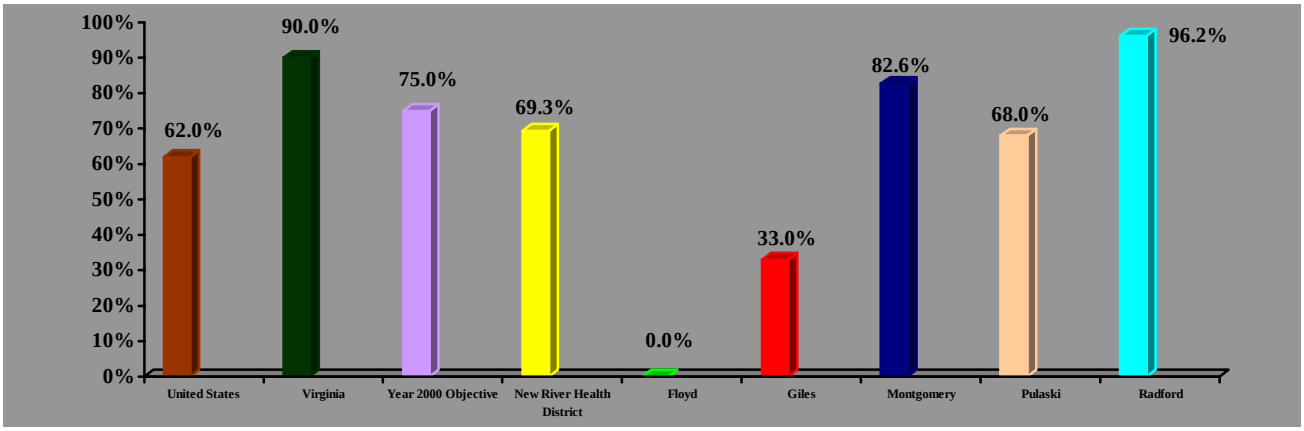
Objective: Increase to at least 75% the proportion of people served by community water systems providing optimal levels of fluoride.

Community water fluoridation is the single most effective and efficient means of preventing dental caries in children and adults, regardless of race or income levels. Widespread exposure to fluoride through drinking water and dental products appears to be the primary factor that has contributed to the declining prevalence of dental caries in the school-age population. While a nationwide decrease in caries has occurred in both fluoridated and nonfluoridated communities, caries prevalence is still significantly lower among children in fluoridated areas.

Residents of the New River Health District receive their household drinking water from a variety of sources. According to data obtained from the Office of Water Programs (OWP), approximately 75.7% receive their water from community (public) water systems. The remainder (24.3%) receive their drinking water from private one-family systems, such as wells and cisterns where fluoride is not added.

Most community water systems have added fluoride to their water supplies. The following graph shows the 1995 respective population percentages of residents in each locality of the New River Health District serviced by community water systems which are fluoridated. Radford City has the highest percentage (96.2%) of residents served by fluoridated community water systems. Montgomery County has 82.6% of its population served by fluoridated community water systems; Pulaski County has 68% and Giles County has 33% of their populations served by fluoridated community water systems. It is important to note that none of the community water systems in Floyd County have fluoride added to the water supply. This range may partly explain the variable incidence of caries found throughout the District. However, fluoridated water is only one of the factors that contributes to the prevalence of caries. Oral hygiene practice, carbohydrate consumption, utilization of professional dental care, and the relative perceived importance of oral health are other important components of this equation.

Percent of Total Population Receiving Fluoridated Water from Community (Public) Water Systems United States, Virginia, Year 2000 Objective, New River Health District and Localities 1995



Source: *Healthy People 2000 Review*, 1997.
Office of Water Programs, Virginia Department of Health, 1997.

According to data obtained from the OWP, the New River Health District has a total of 91 community water systems, serving 118,245 individuals. The following table reflects the actual population served by both fluoridated and nonfluoridated community water systems in the localities and individual communities of the New River Health District. As can be seen in the table, a total of 108,171 individuals receive fluoridated water from community systems; and 10,074 individuals receive water from community systems where no fluoride is added.

Population Served by Fluoridated/Nonfluoridated Community Water Systems
New River Health District and Localities and Individual Communities
1997

Locality	*Population*	*Total Number of Community Water Systems*	*Number (and Percent) of Fluoridated Community Water Systems*	*Number (and Percent) of Population Served by Fluoridated Community Water Systems*	*Number (and Percent) of Nonfluoridated Community Water Systems*	*Number (and Percent) of Population Served by Nonfluoridated Community Water Systems*	*Number (and Percent) of Population on Private Water Systems*
Floyd	**12,219**	**14**	**0 (0%)**	**0 (0%)**	**14 (100%)**	**2,545 (20.8%)**	**9,674 (79.2%)**
Giles	**16,240**	**23**	**2 (8.7%)**	**5,284 (33.0%)**	**21 (91.3%)**	**3,758 (23%)**	**7,198 (44%)**
Montgomery	**76,831**	**29**	**6 (20.7%)**	**63,487 (82.6%)**	**23 (79.3%)**	**2,838 (3.7%)**	**10,506 (13.7%)**
Pulaski	**34,345**	**24**	**7 (29.2%)**	**23,445 (68%)**	**17 (70.8%)**	**933 (3%)**	**9,967 (29%)**
Radford	**16,588**	**1**	**1 (100%)**	**15,955 (96.2%)**	**0 (0%)**	**0 (0%)**	**633 (3.8%)**
New River Health District	**156,223**	**91**	**16 (17.6%)**	**108,171 (69.3%)**	**75 (82.4%)**	**10,074 (6.5%)**	**37,978 (24.2%)**

Source: Office of Water Programs, Virginia Department of Health, 1997.

Fluoride is an element that can occur naturally in water. Drinking water samples from private sources in the New River Health District contain varying amounts of fluoride, generally from 0.07 to 0.40 p.p.m. To date, the New River Health District has collected water samples in Floyd and Montgomery counties only. These samples revealed that the water from one well in Montgomery County contained 1.6 p.p.m., and another contained 2.50 p.p.m. From local water analyses (n=50), Floyd County averages 0.08 p.p.m.; and Montgomery County averages 0.30 p.p.m. The optimum level of fluoridation of drinking water in Virginia is 0.90 p.p.m.

It is important to establish ideal fluoride levels for each region of the Nation based upon the regional climates. Too much systemic fluoride can result in mild to moderate staining of the teeth. This condition is called fluorosis. Residents of warmer climates drink more water throughout the year and will, therefore, ingest more fluoride. Warmer climates, therefore, require lower supplemental fluoride levels in order to remain within recommended guidelines. Concentrations over 1.0 p.p.m. may indicate a need to dilute the drinking water to a more optimum amount.

Oral Health Screenings

Despite dramatic success in the reduction of caries in children over the past 20 years, many oral diseases still appear in young children. Early dental care is an opportunity to educate parents about effective techniques for preventing oral diseases. Since not all children benefit from primary prevention, secondary preventive services--including early diagnosis and prompt treatment--can eliminate pain, infection, and progressive oral diseases.

The 1986 National Health Interview Survey data provide the most recent information regarding utilization of dental services. It is estimated that 80% of dental health care is received by approximately 20% of the population. In children ages five to 11, the likelihood of not having a dental care visit in the previous year was greater among Blacks, Hispanics, the uninsured, and rural residents. These groups were also more likely than their counterparts to report fewer annual visits. Annual family income was directly related to the number of dental visits. The highest income group of $35,000 reported twice as many visits as those in the lowest income group of $10,000 or less. In addition, over half of the homebound elderly have not seen a dentist in 10 years.

Objective: Increase to at least 90% the proportion of all children entering school programs for the first time who have received an oral health screening and follow-up for necessary diagnostic, preventive, and treatment services.

Unfortunately, early and regular dental care among children is far from universal. National data show that approximately 25% of children age two in the Nation have visited a dentist; by ages five and seven, the proportions increase to 75% and 89%, respectively. Achievement of this objective could be linked to other medical requirements for children prior to entering school. Special efforts should be made to reach developmentally disabled children, as well as children with other disabling conditions.

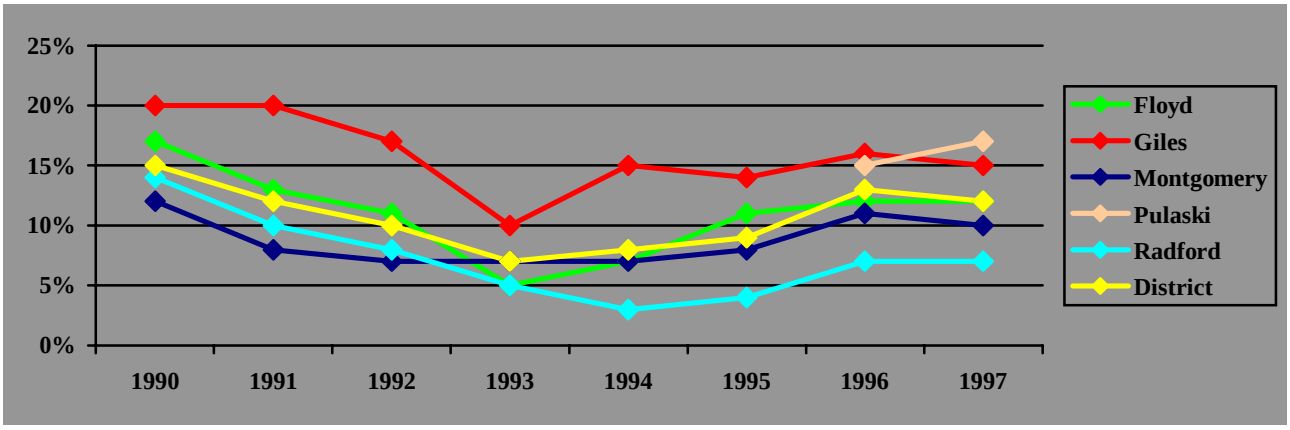
It should be noted that in both 1996 and 1997, the New River Health District has surpassed the screening (and referral) portion of the Year 2000 Objective. For the past ten years, the New River Health District has performed annual school screenings for elementary students, grades K-5. The following table contains the school screening and referral data for the years 1990 through 1997. This annual screening examination is performed in the classrooms of all elementary schools, grades K-5, by the New River Health District's public health dentist. Any child requiring further examination is given a referral form to take home. The first screening performed in Pulaski County in recent years was conducted in 1996; therefore, only two years (1996 - 1997) are shown (15% & 16.6% referred).

Number and Percent of Elementary Students, Grades K - 5, Screened and Referred for Further Dental Examination through Annual School Screenings
New River Health District and Localities
1990 – 1997

	Number		Percent Referred							
Division/School	*Screened 1997*	*Referred 1997*	*1997*	*1996*	*1995*	*1994*	*1993*	*1992*	*1991*	*1990*
FLOYD COUNTY										
Check	272	36	13.2%	10%	13%	9%	6%	14%	18%	20%
Floyd	472	58	12.3%	14%	8%	6%	5%	8%	9%	10%
Indian Valley	155	19	12.3%	9%	9%	6%	6%	9%	9%	12%
Willis	180	15	8.3%	13%	14%	6%	4%	13%	17%	24%
Totals	**1,079**	**128**	**11.9%**	**12%**	**11%**	**7%**	**5%**	**11%**	**13%**	**17%**
GILES COUNTY										
Eastern	370	47	12.7%	11%	15%	11%	11%	14%	16%	19%
McClaugherty	376	54	14.4%	16%	10%	16%	9%	17%	20%	20%
Narrows	443	75	16.9%	21%	17%	18%	10%	21%	23%	22%
Totals	**1,189**	**176**	**14.8%**	**16%**	**14%**	**15%**	**10%**	**17%**	**20%**	**20%**
MONTGOMERY COUNTY										
Belview	225	37	16.4%	19%	9%	10%	7%	8%	9%	11%
Bethel	217	34	15.7%	13%	17%	14%	8%	14%	16%	17%
Christiansburg Elementary	341	31	9.1%	10%	7%	5%	5%	5%	7%	8%
Christiansburg Primary	394	38	9.6%	14%	6%	9%	12%	10%	9%	12%
Elliston	225	45	20%	16%	14%	14%	13%	14%	15%	17%
Falling Branch	464	41	8.8%	12%	9%	7%	5%	5%	0%	0%
Gilbert Linkous	386	27	6.7%	6%	5%	5%	5%	4%	4%	5%
Harding Avenue	277	21	7.6%	6%	5%	6%	2%	4%	1%	4%
Kipps Elementary	465	35	7.5%	5%	7%	7%	--	--	--	--
Margaret Beeks	438	22	5.0%	8%	5%	4%	8%	5%	7%	6%
Price's Fork	257	18	7.0%	13%	8%	7%	5%	8%	11%	20%
Riner	292	39	13.4%	14%	11%	9%	8%	11%	9%	11%
Shawsville	269	41	15.2%	13%	12%	9%	10%	11%	14%	17%
Totals	**4,250**	**429**	**10.1%**	**11%**	**8%**	**7%**	**7%**	**7%**	**8%**	**12%**
PULASKI COUNTY										
Claremont	447	90	20.1%	21%	--	--	--	--	--	--
Critzer	462	72	15.6%	23%	--	--	--	--	--	--
Dublin Elementary	308	39	12.7%	16%	--	--	--	--	--	--
Draper	130	21	16.2%	9%	--	--	--	--	--	--
Newbern	65	6	9.2%	13%	--	--	--	--	--	--
Northwood	123	22	17.9%	23%	--	--	--	--	--	--
Riverlawn	300	52	17.3%	19%	--	--	--	--	--	--
Snowville	158	29	18.4%	14%	--	--	--	--	--	--
Totals	**1,993**	**331**	**16.6%**	**15%**	--	--	--	--	--	--
RADFORD CITY										
Belle Heth	356	19	5.3%	3%	2%	1%	4%	5%	12%	11%
McHarg	484	40	8.3%	9%	6%	5%	6%	10%	8%	17%
Totals	**840**	**59**	**7.0%**	**7%**	**4%**	**3%**	**5%**	**8%**	**10%**	**14%**
Grand Totals	**9,351**	**1,123**	**12.0%**	**13%**	**9%**	**8%**	**7%**	**10%**	**12%**	**15%**

The following graph shows the percent of elementary school students, grades K-5, in the New River Health District who were referred for further dental examination through school screenings by the public health dentist for 1990 through 1997. As can be seen, Pulaski County has the highest referral rate (17%); and Radford City has the lowest (7%) using 1997 data. Although various attempts have been made to assess follow-up treatment, it is not known what percentage of these children access further dental care.

Percent Students Referred for Further Dental Examination through School Screenings
Conducted by New River Health District Dental Program
New River Health District and Localities
1990 - 1997



What you can do:

- **Call the New River Health District dental clinic for information on community dental health programs and clinical services.**

- **Convert your child from breastfeeding directly to drinking from a cup, if possible, avoiding bottles.** The slow sucking from bottles with sugar laden juices and milk prolongs the contact of sugar with the teeth. If you do use baby bottles, avoid filling them with juice or other sweet liquids, even milk.

- **Clean your child's gums and teeth with a washcloth or gauze pad from the newborn stage through teething.**

- **Clean baby teeth with a small, soft toothbrush when the first teeth appear.** If your child resists the brush, continue cleaning with a washcloth until the molars appear, then use a brush.

- **Take your child for dental hygiene care and dental checkups at an early age, between the child's second and third birthdays**.

- **Teach your child how to brush his/her teeth at an early age.** By age four or five, a child may be able to brush alone, with supervision. However, a parent must still help brush and floss the child's teeth until the child is able to get all teeth clean.

- **Ask your dentist or dental hygienist about using fluoride and applying sealants to decrease your child's chances of getting cavities.**

Summary

The New River Health District receives a mixed score on the oral health component of this report. Improvements can be made in our District's rate of caries experience through expanded education and early interception of habits that create an oral environment which is conducive to caries formation. Nutrition, oral hygiene skills and habits, and greater parental involvement in children's dental health--all must be components of a dental health strategy resulting in improved dental caries rate.

In order to improve the treatment rate of children with dental caries, strategies must be developed which address access concerns. These strategies must consider access, both from the economic perspective, as well as a patient's behavioral and compliance issues.

With regard to fluoridation, all has been done that can currently be accomplished with existing facilities and resources. Floyd County is the only locality without a fluoridated community (public) water system, and such a system modification is impractical at this time. At 69.3%, the District is below the State (90.0%) and Year 2000 Objective (75.0%) levels and is ahead of national fluoridation levels (62.0%).

The New River Health District is doing well with the screening and referral of school-age children. Presently, the District screens 100% of grades K-5. Giles County historically has the greatest number of students referred for further examination, and Radford City has the lowest. The follow-up tools necessary to monitor treatment of dental needs are difficult to design and implement. A number of methods have been attempted, including having the treating dentist sign the referral form and return it to the New River Health District public health dentist. The District has even provided self-addressed stamped envelopes for the dentists to use. None of these techniques have proven successful. This aspect of the District's screening program needs improvement.

Finally, future improvement will be realized by wise resource allocation, partnerships with the private dental sector, and policies which encourage strong family relationships that will foster a commitment to improved oral health.